Appendix K

Cultural Resources

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Cultural Resources

K.1 Introduction

This appendix provides details regarding known and potential cultural resources in areas in which the Hanford Solid Waste (HSW) Program activities, as described in Section 3 of this *Hanford Site Solid* (*Radioactive and Hazardous*) Waste Program Environmental Impact Statement (HSW EIS), may take place. These areas are portions (including Low Level Burial Grounds [LLBGs] and the immobilized low-activity waste [ILAW] disposal area near the PUREX Plant) of the 200 West and 200 East Areas (including the Central Waste Complex [CWC] expansion area), Area C containing borrow pit material, access roads, and a stockpile area north of State Route 240 near the 200 West Area.

Cultural resources reviews, in accordance with the National Historic Preservation Act (16 USC 470), are conducted to ensure that potential impacts to cultural resources and historic properties are considered in advance of federal undertakings. Copies of letters of consultation (for this HSW EIS) with the State of Washington Office of Archaeology and Historic Preservation are attached.

K.1.1 200 East and 200 West Areas

Since 1987, a total of 41 cultural resources reviews have been conducted for various projects associated with the LLBGs, surrounding areas in the 200 West and 200 East Areas, and mineral source locations (see Table K.1). New reviews are completed when any change in project scope or location occurs. Thus cultural resources reviews would be initiated for project activities associated with alternative groups considered in this EIS to determine whether or not the proposed activities associated with waste management operations would have the potential to cause effects on historic properties [36 CFR 800.3(a)(1)].

The only buildings and structures that are eligible for listing in the National Register of Historic Places and have the potential to be affected by projects associated with the Hanford Solid Waste (HSW) Program activities in the 200 West and 200 East Areas include certain facilities within the T Plant Complex. Modifications of these facilities, as proposed for all alternative groups (except Alternative Group B and the No Action Alternative), may require additional cultural resources reviews.

 Table K.1. Previously Conducted Cultural Resources Reviews^(a)

Hanford Cultural Resource Case Number	Title	Activities Reviewed	Cultural Resources
87-200-016	Cultural Resources Survey of the Proposed 200-West 218-W-3A, 218-W-3AE, and 218-W-5 Waste Trenches.	Trench construction in 218 W-5, 218-W-3A, 218-W-3AE.	No archaeological, historic, paleontological, or Native American cultural sites.
87-200-021	Cultural Resources Survey of the Proposed PCB/PU Storage Facility HCRC# 87-200-021 and of the Proposed Hanford Center Waste Complex HCRC# 88-200-005.	200 East and 200 West Areas. Construction of plutonium/ polychlorinated biphenyl storage facility and the steam tie lines and water system upgrade tie lines between areas.	White Bluffs Road.
88-200-005	Cultural Resources Review of the Hanford CWC.	100 ac tract of land bounded on the south by 19 th Street, on the east by Dayton Avenue, and on the north by 23 rd Street.	White Bluffs Road, 2 isolated finds, and 1 site.
88-600-001	Cultural Resource Review of Barrier Development Program Fine Soil Borrow Pit at McGee Ranch.	McGee Ranch fine soils borrow pit use.	Review not completed numerous archaeological sites.
89-200-005	Cultural Resources Review of the 218-E-12B Special Naval Disposal Trench Expansion.	218-E-12B. Excavation to the west for 80 ft and to a depth of 30 ft below existing ground surface.	No effect on any historic properties.
89-200-006	Cultural Resources Review of the 218-W-2A and 216-T-18 Cleanup.	218-W-2A, 216-T-18, 218 W-3, 218-W-4, borrow area west of 213-W-3.	No known National Register properties.
89-200-008	Cultural Resources Review of the LLBG Permit Application.	218-E-10, 218-12B, 218-W 3A, 218-W-3AE, 218 W-4B, 218-W-4C, 218-W-5, 218-W-6 LLBGs. Maximum depth of excavation: 3 ft.	White Bluffs Road, historic artifacts.
89-200-023	Cultural Resources Review of the Effluent Retention and Treatment Complex (Effluent Retention and Treatment Complex (ERTC).	84.9 ha to develop facilities and a 26 km pipeline corridor to the Columbia River.	White Bluffs Road, 45BN307, HT-89-029, HT-90-002, HT-89-030, HT-89-031, HI-89-016.
91-600-006	Cultural Resources Review of the Privatization Steam Plant.	Gravel Pit 30. 23 acres at northwest corner of the junction between Route 3 and Route 4 South.	HT-99-007 (recorded in 1999).
91-600-012	Cultural Resources Review of the Action Plan for Characterization of McGee Ranch Oil.	McGee Ranch boring and sampling to select and characterize potential borrow locations for fine-textured soils.	Cultural properties present, survey recommended.
93-200-001	Cultural Resources Review of the Environmental Restoration Disposal Facility (ERDF)	A disposal site for waste exhumed during Hanford Site CERCLA and RCRA cleanup actions. Excavations at the site will be extensive and may be up to 12 meters deep.	Four archaeological sites, one paleontologic site, and nine isolated artifacts.

Table K.1. (contd)

Hanford Cultural Resource Case Number	Title	Activities Reviewed	Cultural Resources
93-200-004	Cultural Resources Review of 200-BP-1 Hanford Prototype.	Vernita Basalt Quarry. Total potential volume of McGee Ranch silt - 80,000 yd³, basalt riprap - 115,000 yd³, and batch plant - 180,000 yd³.	No known cultural resources or historic properties in quarry boundary.
93-200-008	Cultural Resources Review of the Transuranic (TRU) Waste Retrieval/Characterization Pilot Program.	LLBG trenches T01, 4C; T04, 4C; T07, 4B; T20, 4C; T24, 4C.	No known cultural resources or historic properties.
93-200-074	Cultural Resources Review of the Solid Waste Retrieval Complex, Phase I (W-113) and Enhanced Radioactive and Mixed waste Storage Facility Project.	200 West Area. Phase I Retrieval complex for retrieving transuranic solid waste including support buildings and facilities. Construction of Phase V Facility for storage of waste containers.	White Bluffs Road, 2 isolated finds, and 1 historic site.
93-200-137	Cultural Resources Review of the W-026, Waste Receiving and Processing 1 Facility (WRAP) Project.	200 West Area. Construction of the WRAP 1 facility in the CWC located southwest of the intersection of 23 rd Street and Dayton Avenue.	No known cultural resources or historic properties.
93-200-154	Cultural Resources Review of the CWC and TRU Storage and Assay Facility (TRUSAF) Paving Project.	200 West Area. Paving of 4 gravel and dirt areas.	No known cultural resources or historic properties.
93-600-002	Cultural Resources Review for the Expansion of Gravel Pits 23 and 30 Project.	Gravel Pits 30 and 23 expansion.	No known cultural resources.
94-200-018	Cultural Resources Review of the Geologic Testing of Mixed Waste Trench Project.	218-W-5. Maximum size of excavation: 4 test pits, 17 ft deep.	No known cultural resources or historic properties.
94-200-068	Cultural Resources Review of the 200/Solid Waste/CWC Facility Project.	200 West Area. Service pole holes adjacent to 2403-WB facility. Maximum size of excavation: 2 ft in diameter and 6 ft deep.	No known cultural resources or historic properties.
94-200-077	Cultural Resources Review of the Burial Ground Increase Trench #33 Project.	218-W-4C. Maximum size of excavation: trench enlarged from 6 ft deep to 24 ft deep with base widened to 24 ft.	No known cultural resources or historic properties.
94-200-200	Cultural Resources Review of the Storage of Long Length Radioactive Mixed Waste Project.	200 West Area. 24,000 ft ² for 2 structures, storage for a crane and rails near the intersection of 19 th Street and Dayton Avenue.	No known cultural resources or historic properties.
94-200-097	Cultural Resources Review of the W-236A, Multi-Function Waste Tank Facility, 1994 Project.	Adjacent to Gravel Pit 30. Project modification from previous 93-600-004 cultural review.	HT-99-007 (recorded in 1999).
94-600-001	Cultural Resources Review of the Spent Nuclear Fuel Storage Facility Project.	Survey adjacent to Gravel Pit 30 (northern and eastern boundary).	HI-94-003.

Table K.1. (contd)

Hanford Cultural Resource Case	mi-		G 1. 15
Number	Title	Activities Reviewed	Cultural Resources
94-600-032	Survey Narrative for the Topographic Survey of a portion of the ERDF Project	Topographic survey of project area by 4-wheeled off road vehicles that will drive over the entire area; most of which was previously surveyed for ERDF	No known cultural resources or historic properties.
94-600-034	Cultural Resources Review of the ERDF Project W-296, NE Portion Project	Additional 1.126 km ² added to the original 11.0 km ² of area surveyed for ERDF.	Two isolated artifacts: an Army (Camp Hanford era) communication line and round metal can.
95-200-066	Cultural Resources Review of the 218-E-12B Trench 94 Project.	218-E-12B. Excavation in bottom of trench to maximum depth of 3 ft.	No known cultural resources or historic properties.
95-200-124	Cultural Resources Review of Removal of Contaminated Soils in and around 218-W-4B Burial Grounds.	218-W-4B.	No known cultural resources or historic properties.
95-200-065	Cultural Resources Review of the 218-W-4C Trench 14 - High Integrity Containers Project.	218-W-4C. Maximum excavation size: 6 holes 36 inches in diameter and 19 ft deep in bottom of trench.	No known cultural resources or historic properties.
95-200-104	Cultural Resources Review of the Solid Waste Retrieval complex, Enhanced Radioactive and Mixed Waste Storage Facility, Infrastructure Upgrades, and Central Waste Support Complex.	200 West Area. Entire area previously reviewed except for future drain field.	White Bluffs Road, 1 site, 2 isolated finds.
96-200-058	200 Area Block Survey.	Remainder of undisturbed ground within 200 East and West Areas not previously surveyed.	HI-96-002, HI-96-003, HI-96-004, HI 96 005, HI-96-006, HI-96-007, HT-96-002, HT-96-010.
96-200-059	Cultural Resources Review of the 218-W-4C Trench 14 - Culvert Containers.	218-W-4C. Maximum excavation size: 25 ft wide by 25 ft long by 8 ft deep.	No known cultural resources or historic properties.
96-200-076	Cultural Resources Review of the Routine Operation of Grouting in the 200 West Burial Grounds.	218-W-5, 218-W-3A, 218-W-3AE, 218-W-4C. Maximum depth of excavation: up to 8 ft below trench floor.	No known cultural resources or historic properties.
96-200-102	Cultural Resources Review of the Widening and Deepening of Trench 36, 218-E-12B	218-E-12B. Maximum size of excavation: 80 ft wide at top, 20 ft wide at bottom, and 20 ft deep.	No known cultural resources or historic properties.
97-200-023	Cultural Resources Review of the Burial Ground 218-W-5 Trench 33 Expansion.	218-W-5. Maximum size of excavation: trench widening to 40 ft for length of trench (1160 ft), excavation to 20 ft.	No known cultural resources or historic properties.
97-200-062	Cultural Resources Review of the Burial Ground 218-W-5 Trench 34 Rain Curtain.	218-W-5. Maximum size of excavation: 1 to 2 ft deep trenches around Trench 34 and down inner edge of truck ramp.	No known cultural resources or historic properties.

Table K.1. (contd)

Hanford Cultural Resource Case Number	Title	Activities Reviewed	Cultural Resources
98-200-031	Cultural Resources Review of the Subsidence Repair and Maintenance in the Low Level Burial Grounds.	218-E-10, 218-E-12B, 218 W-3A, 218-W-3AE, 218-W-4B, 218-W-4C, 218-W-5, 218-W-6.	No known National Register properties.
99-200-008	Cultural Resources Review for Widening Trench 36 218-E-12B Burial Ground.	218-E-12B. Maximum size of excavation: 900 ft long, 16 ft deep, and 25 width added.	No known National Register properties.
01-200-006	Cultural Resources Review for the Storage of K Basin Sludge at the 221-T and the 271-T Facilities	221-T and 271-T Facility upgrades to safety and security systems, 221-T modifications to hot cells.	No effect on facility characteristics that make them eligible for National Register.
02-200-050	Cultural Resources Review of Immobilized Low-Activity Waste (ILAW) Disposal Facility	Low-activity waste to be disposed of in six lined trenches southwest of the PUREX Plant in the 200 East Area.	No effect on historic properties.
02-200-051	Cultural Resources Review of Melter Trench	Disposal of melters into a specifically designed trench in 3 alternative locations in the 200 East Area.	No effect on historic properties.
02-200-054	Cultural Resources Review of Groundwater Well Installation	Four groundwater wells to be installed in several locations in the 200 West Area.	No effect on historic properties.

⁽a) Note that some reviews include areas that are not considered in this HSW EIS, for example the McGee Ranch, which is now within the Hanford Reach National Monument.

K.1.2 Central Waste Complex Expansion Area

Under the No Action Alternative, the CWC in the 200 West Area would continue to receive and store newly generated wastes. With existing storage capacity reaching its limit, the CWC would be expanded. Expansion would occur in a 36-ha (89-ac) area south of the existing CWC and a 30-ha (74-ac) area west of the CWC and south of the 218-W-5 expansion area. Depth of excavation would be 0.9 m (3 ft) for the CWC buildings.

Staff of the Hanford Cultural Resources Laboratory (HCRL) conducted a records and literature search that revealed the project area had been previously surveyed for cultural resources. Cultural resources identified within the project area are provided in Table K.2

The cultural resources surveys of the project area concluded that no known historic properties are located within the CWC expansion area.

Table K.2. Cultural Resources Identified in Project Area

Survey Number/Name	Cultural Resources Identified in the Project Area	Eligible to the National Register
HCRC# 88-200-038, Archaeological Survey of the 200 East and 200 West Areas.	HT-88-009, 1920s/1930s can and bottle scatter - possible sheepherder/cowboy camp.	Determined not eligible.
HCRC# 96-200-058, 200 Area Block Survey.	HT-96-002: sparse scatter of cryptocrystalline silica (ccs) flakes and historic debris. HI-96-004: ccs utilized flake. HI-96-005: ccs flake.	Determined not eligible.
HCRC# 95-200-104, Solid Waste Retrieval Complex (Infrastructure).	No cultural resources located.	NA
HCRC# 2000-600-023, White Bluffs Road Survey.	H3-121, White Bluffs Road and associated features.	Determined eligible to the National Register. The section that runs through the 200 West Area and through the project area, however, has been determined to be noncontributing due to lack of physical integrity.

HCRC = Hanford Cultural Resources Case; see Appendix L for details on source. NA = not applicable.

K.1.3 New Waste Processing Facility

The location of the new waste processing facility that would be constructed, if Alternative Group B were to be implemented, is directly west of WRAP in the 200 West Area. The previous cultural resources surveys conducted in the CWC expansion area concluded that no known historic properties are located within the footprint of the new waste processing facility.

K.2 Area C – Borrow Pits, Stockpile Area, and Access Roads

Area C borrow pits would be used for excavation of basalt and fine textured material, such as silt loam, gravel, or sand, for the construction of closure covers to be placed over low-level waste (LLW) trenches in Alternative Groups A through E and MLLW trenches in all alternatives. The HCRL conducted a cultural resources review of the 926-ha (2287-ac) Area C borrow pit in February 2002 (see Figure K.1).

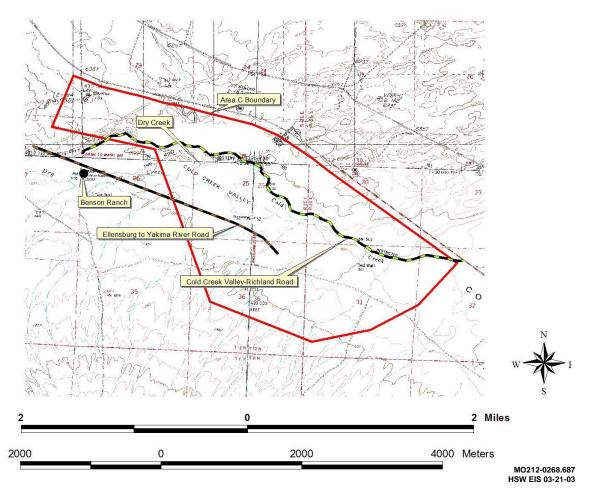


Figure K.1. Area C - Historical Features

K.2.1 Literature and Record Search – Previous Cultural Resources Surveys

Staff of HCRL conducted a records and literature search that revealed a small section of Area C had been previously surveyed in 1994 for cultural resources (Duranceau 1995). The survey was conducted in the northwestern portion of Area C. Three isolated finds were recorded in the project area:

ISOLATE NUMBER	DESCRIPTION
HI-94-032	Two white cryptocrystalline silica (ccs) flakes.
HI-94-036	A historic "fence jack"—a rock pile with remains of a split rail.
HI-94-037	A large historic riveted metal collared cylinder.

A previous cultural resources survey three miles west of the project area resulted in the establishment of the Rattlesnake Springs Archaeological District and listing in the National Register of Historic Places (Rice 1968). Sites recorded by the survey include evidence of prehistoric activity near Rattlesnake Springs and Dry Creek. The historic White Bluffs Road, which passed through Rattlesnake Springs was

identified in the survey and is listed in the National Register. The road was an important Native American and Euro-American route from Yakima to the town of White Bluffs on the Columbia River and gives evidence to the fact that the Rattlesnake Springs area was a crossroad for Native Americans as well as early Euro-American settlers in the region.

K.2.2 Research Initiatives and Field Reconnaissance

For the purposes of this EIS, a cultural resources survey of Area C is recommended prior to the commencement of excavation activities. HCRL staff has conducted a variety of research initiatives to assess the potential cultural resources impacts the project may have. These activities are summarized below.

Historical research. During the literature and records search, previous cultural resources investigations, historic maps, land records, and local histories were reviewed. Former residents of the Hanford area were also contacted to see what, if any, historic activity they recalled. Results of this research indicated that portions of Area C, located in the Rattlesnake Flats section of Cold Creek Valley, were used for grazing and ranching from the 1880s to 1943 (see Figure K.1). Irrigation was undertaken at ranches west (Benson Ranch) and south (Snively Ranch) of the project area. Large-scale irrigation efforts for the entire Cold Creek Valley were promoted, but they never reached fruition (Van Arsdol 1972).

A review of the 1881 General Land Office map of the Cold Creek Valley revealed that the Ellensburg to Yakima River Road traversed the project area in an east-west direction and was possibly used as an Indian trail prior to Euro-American settlement. The 1943 Real Estate maps depict another road connecting Cold Creek Valley with Richland. The road parallels Dry Creek along the northern section of the project area. The maps also note that at the time of the establishment of the Hanford Site, ownership of the project area was divided among the State of Washington, Northern Pacific Railroad, and United States government.

The Benson Ranch, located on the western boundary of the project area, is an unrecorded archaeological site that is noted on the 1915 U.S. Geological Survey topographic maps. The Benson Ranch obtained its water for irrigation from Rattlesnake Springs in order to grow alfalfa and other crops, and a well-used trail connected the ranch with the springs (Hinds and Rodgers 1991). Rattlesnake Springs was valued by both prehistoric peoples and Euro-American settlers for its year-round water supply and source of plentiful game. Further, Rattlesnake Springs holds prehistoric significance as there is evidence of aboriginal occupation some distance from the Columbia River. Until recently, most prehistoric archaeological investigations of the mid-Columbia Basin have been conducted along major rivers and tributaries. It was noted that surface findings in the vicinity of Rattlesnake Springs indicate possible human presence as far back as 8000 to 10,000 years.

Photogrammetry. Aerial photographs from recent decades were analyzed to determine if historic roads still existed and to see if any additional historic activity could be located. The analysis confirmed the location of roads along with various probable cultural features; however, no major sites, such as farmsteads or military encampments (that is, Camp Hanford's forward positions), were observed. In 1963, the U.S. Army conducted maneuvers, called Operation Braveshield, for several weeks in the Cold

Creek Valley. The troops proceeded north to Rattlesnake Springs and followed the Cold Creek drainage to the Yakima Firing Range (DOE-RL 1995). At this point, however, little evidence suggests that Area C was used for Army exercises.

Ethnographic research. From previous ethnographic interviews conducted by HCRL with local Native Americans, the area has been identified as a travel route for Native Americans between Rattlesnake Springs and the Yakima and Columbia rivers. The area lies in close proximity to Rattlesnake Mountain, a place considered important by local Native American tribes.

Archaeological research and field reconnaissance. Previous archaeological surveys in the area, limited to only one small survey (Duranceau 1995), identified minimal presence of archaeological remains from the prehistoric and historic periods. To gain additional perspective on the likelihood that significant archaeological remains are located in Area C, staff conducted a field reconnaissance of high potential areas identified by a predictive model developed by the HCRL for the Hanford Site (see Figure K.2). The model indicated the areas located along the dry beds of Cold Creek and Dry Creek would have a moderately high chance of containing archaeological sites. Four staff members conducted a field reconnaissance, principally along the creeks, their tributaries, and along the dirt road parallel to Dry Creek. Cultural material observed included one cryptocrystalline silica flake, numerous rusted cans and contemporary beer cans, military telephone wire, and barbwire fence lines that run parallel to Dry Creek and the dirt road. If significant archaeological remains are present in Area C, they are most likely buried under wind blown deposition.

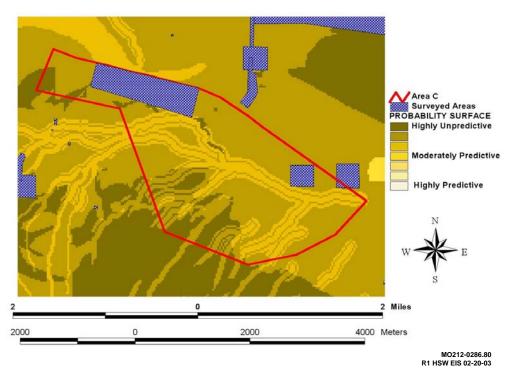


Figure K.2. Area C Predictive Model



Department of Energy

Richland Operations Office P.O. Box 550 Richland, Washington 99352

LIAN 24 1994

Ms. Mary M. Thompson
State Historic Preservation Officer
Office of Archaeology and
Historic Preservation
Department of Community Development
111 West 21st Avenue, KL-11
Olympia, Washington 98504-5411

Dear Ms. Thompson:

POTENTIAL HISTORIC PROPERTIES; ENVIRONMENTAL RESTORATION DISPOSAL FACILITY

Enclosed is a survey report and site forms for the Environmental Restoration Disposal Facility (ERDF) facility project at the U.S. Department of Energy, Richland Operations Office's (RL) Hanford Site. A survey in the proposed project area identified one prehistoric isolated artifact (HI-89-016), a cobble tool. Nine isolated artifacts consisting of three prehistoric and six historic items; and five sites, one paleontologic, one with prehistoric and historic/modern components, and three with historic components were also recorded. We believe that Sites HP-93-001, HT-93-080, and HT-93-081 do not meet any of the criteria necessary for listing on the National Register of Historic Places (Register). The research potential of these sites and of all but one of the isolates has been exhausted through recordation and/or collection. Sites HT-93-083 and HT-93-084 by themselves do not retain nationally significant information. However, viewed in a broader historic context, Euro-American ranching in Southeastern Washington, the sites represent part of the greater archaeological record and may be considered regionally or locally significant. However, since these two sites are outside the proposed ERDF boundaries, the proposed project will have no effect on them.

In accordance with CFR 36, 800.4, RL has made a good faith effort to identify historic properties at this proposed location and to evaluate the eligibility of these properties to the Register. A literature and records review and site surveys, where required, have indicated that no historic properties eligible for the Register will be affected by this undertaking.

If any archaeological or additional historical resources are discovered during project activities, work will be halted and your office consulted immediately. Your office will also be consulted if the site boundaries are modified. Therefore, in accordance with CFR 36, 800.4(d), we are providing documentation supporting these findings to your office.

Your signature below will acknowledge receipt of our notification. Please return a signed copy for our records. If you have any questions or are in need of additional information I can be contacted at (509) 376-6354.

Sincerely,

Charles R. Pasternak, Manager Cultural Resources Program

SID:CRP

Discount a. Mullita 2/2/94
Office of Archaeology
and Historic Preservation

Enclosures: ERDF Site Report & 15 Site Forms

cc w/o encls: G. V. Last, PNL M. K. Wright, PNL D. W. Harvey, PNL R. H. Engelmann, WHC

012894-10



STATE OF WASHINGTON

DEPARTMENT OF COMMUNITY DEVELOPMENT

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

111 21st Avenue S.W. • P.O. Box 48343 • Olympia, Washington 98504-8343 • (206) 753-4011 • SCAN 234-4011

February 4, 1994

Mr. Charles R. Pasternak, Manager Cultural Resources Program Department of Energy Richland Field Office P.O. Box 550 Richland, WA 99352

Log: 012894-10-DOE

Re:

Cultural Resources Survey

for ERDF

Dear Mr. Pasternak:

The Washington State Office of Archaeology and Historic Preservation (OAHP) is in receipt of your letter and documentation regarding the above referenced cultural resources survey in the area proposed for the Environmental Restoration Disposal Facility (ERDF) at the Hanford Reservation. In addition to the survey report, inventory forms were submitted identifying prehistoric and historic sites and one paleontologic site.

OAHP has reviewed the report and the site forms generated by this survey effort. As a result of our review, we agree with your recommendation that sites HT-93-083 and HT-93-084 should remain unevaluated until such time that development of a context on ranching in southeastern Washington can shed more light on the level of significance of these two properties. It is my understanding that these sites will not be affected by the ERDF project. In addition, we concur with your opinion that the remaining sites identified by this survey effort are not eligible for listing in the National Register of Historic Places. Therefore, further contact with OAHP on this project is not necessary. However, in the event the project scope changes or archaeological resources are uncovered during implementation, work should be halted immediately and contact made with OAHP for further consultation.

artice ou

Mr. Charles R. Pasternak February 4, 1994 Page Two

Charles, thank you for the opportunity to comment on this action. Should you have any questions, please feel free to contact me at (206) 753-9116.

Sincerely,

Gregory A. Griffith

Comprehensive Planning Specialist

GAG:aa Enclosure

cc: Mona Wright